2028, #4

Attorney's Docket No.: 11019-029001

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Applicant : Donald E. Ackley
Serial No. : 10/027,115
Filed : December 20, 2001
Title : MICRONEEDLE ARRAY SYSTEMS

Art Unit : Unknown
Examiner : Unknown

Commissioner for Patents
Washington, D.C. 20231

INFORMATION DISCLOSURE STATEMENT

Applicant submits the references listed on the attached form PTO-1449, copies of which are enclosed.

This statement is being filed within three months of the filing date of the application or before the receipt of a first Office action on the merits. Please apply any charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

Date: 3/13/2002

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CERTIFICATE OF DELIVERY BY HAND

I hereby certify that this correspondence is being delivered by hand on the date indicated below and is addressed to the Commissioner for Patents, Washington, D.C. 20231.

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Substitute Form PTO-1449 (Modified)	U.S. Department of Commerce Patent and Trademark Office	Attorney's Docket No. 11019-029001	Application No. 10/027,115
Information Disclosure Statement by Applicant (Use several sheets if necessary)		Applicant Donald E. Ackley	
(37 CFR §1.98(b))		Filing Date December 20, 2001	Group Art Unit

U.S. Patent Documents

Examiner Initial	Desig. ID	Patent Number	Issue Date	Patentee	Class	Subclass	Filing Date If Appropriate
	AA	6,080,116	06/27/2000	Erickson et al.			
	AB	6,050,988	04/18/2000	Zuck			
	AC	5,883,211	03/16/1999	Sassi et al.			
	AD	5,879,326	03/09/1999	Godshall et al.			
	AE	5,876,675	03/02/1999	Kennedy			
	AF	5,865,786	02/02/1999	Sibalis et al.			
	AG	5,858,188	01/12/1999	Soane et al.			
	AH	5,852,495	12/22/1998	Parce			
	AI	5,848,991	12/15/1998	Gross et al.			
	AJ	5,843,114	12/01/1998	Jang			
	AK	5,807,375	09/15/1998	Gross et al.			
	AL	5,801,057	09/01/1998	Smart et al.			
	AM	5,697,901	12/16/1997	Eriksson			
	AN	5,658,515	08/19/1997	Lee et al.			
	AO	5,632,957	05/27/1997	Heller et al.			
	AP	5,618,295	04/08/1997	Min			
	AQ	5,611,942	03/18/1997	Mitsui et al.			
	AR	5,611,806	03/18/1997	Jang			
	AS	5,605,662	02/25/1997	Heller et al.			
	AT	5,591,139	01/07/1997	Lin et al.			
	AU	5,582,184	12/10/1996	Erickson et al.			
	AV	5,527,288	06/18/1996	Gross et al.			
	AW	5,457,041	10/10/1995	Ginaven et al.			
	AX	5,401,242	03/28/1995	Yacowitz			
	AY	5,383,512	01/24/1995	Jarvis			
	AZ	5,364,374	11/15/1994	Morrison et al.			
	AAA	5,335,670	08/09/1994	Fishman			

Examiner Signature	Date Considered

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	ABB	5,279,552	01/18/1994	Magnet			
	ACC	5,279,544	01/18/1994	Gross et al.			
	ADD	5,250,023	10/05/1993	Lee et al.			
	AEE	5,138,220	08/11/1992	Kirkpatrick			
	AFF	5,054,339	10/08/1991	Yacowitz			
	AGG	5,035,711	07/30/1991	Aoki et al.			
	AHH	4,969,468	11/13/1990	Byers et al.			
	AII	4,921,475	05/01/1990	Sibalis			
	AJJ	4,798,582	01/17/1989	Sarath et al.			
	AKK	4,771,660	09/20/1988	Yacowitz			
	ALL	4,703,761	11/03/1987	Rathbone et al.			
	AMM	4,671,288	06/09/1987	Gough			
	ANN	4,664,651	05/12/1987	Weinshenker et al.			
	AOO	4,320,758	03/23/1982	Eckenhoff et al.			
	APP	4,222,392	09/16/1980	Brennan			
	AQQ	4,156,659	05/29/1979	Barnhart			
	ARR	4,109,655	08/29/1978	Chacornac			
	ASS	3,964,482	06/22/1976	Gerstel et al.			
	ATT	3,918,449	11/11/1975	Pistor			
	AUU	3,675,766	07/11/1972	Rosenthal			
	AVV	3,596,660	08/03/1971	Melone			
	AWW	3,556,080	01/19/1971	Hein			
	AXX	3,221,740	12/07/1965	Rosenthal			
	AYY	3,221,739	12/07/1965	Rosenthal			
	AZZ	25,637	09/08/1964	Kravitz et al.			
	AAAA	3,136,314	06/09/1964	Kravitz et al.			
	ABBB	3,123,212	03/03/1964	Taylor et al.			

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	ACCC	3,086,530	04/23/1963	Groom			
	ADDD	3,034,507	05/15/1962	McConnell et al.			
	AEEE	2,893,392	07/07/1959	Wagner			

Foreign Patent Documents or Published Foreign Patent Applications

Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation Yes	Translation No
	AFFF	7-132119	05/23/1995	JP			X	
	AGGG	7-196314	08/01/1995	JP				
	AHHH	EP 0 652 600 B1	04/28/1999	EP				
	AIII	WO 93/17754	09/16/1993	WIPO				
	AJJJ	WO 96/37256	11/28/1996	WIPO				
	AKKK	WO 96/40365	12/19/1996	WIPO				
	ALLL	WO 96/41236	12/19/1996	WIPO				
	AMMM	WO 97/07734	03/06/1997	WIPO				
	ANNN	WO 98/00193	01/08/1998	WIPO				
	AOOO	WO 98/28037	07/02/1998	WIPO				
	APPP	EP 0 497 620 B1	07/29/1998	EP				
	AQQQ	DE 195 25 607 A1	01/16/1997	Germany				
	ARRR	WO 98/00194	01/08/1998	WIPO				
	ASSS	WO 98/28037	07/02/1998	WIPO				
	ATTT	WO 98/00193	01/08/1998	WIPO				
	AUUU	WO 99/64580	12/16/1999	WIPO				

Other Documents (include Author, Title, Date, and Place of Publication)

Examiner Initial	Desig. ID	Document
	AVVV	"101 Uses for Tiny Tubules", *Science*. Vol. 247, Part I, March 23, 1990
	AWWW	"Single-crystal whiskers," *Biophotonics International* p. 64 (November/December 1996)

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	AXXX	Amsden et al, "Transdermal Delivery of Peptide and Protein Drugs: an Overview," *ALChE Journal* 41(8):1972-1997 (1995).
	AYYY	Bronaugh et al, *Percutaneous Absorption: Mechanisms, Methodology, Drug Delivery*, (1985)
	AZZZ	Brumlik et al. "Template Synthesis of Metal Microtubules" *J. Am. Chem. Soc.* 199, 113, 3174-3175
	AAAAA	Despont, et al. " High-Aspect-Ratio, Ultrathick, Negative-Tone Near-UV Photoresist For MEMS Applications" *Proc. of IEEE 10th Annual International Workshop on MEMS*, Nagoya, Japan pp. 518-522 (Jan, 26-30, 1997).
	ABBBB	Edell et al., "Factors Influencing the Biocompatibility of Insertable Silicon Microshafts in Cerebral Cortex" *Biomedical Engineering* Vol. 39(6) June 1992.
	ACCCC	Frazier et al., "Metallic Microstructures Fabricated using Photosensitive Polyimide Electroplating Molds," *Journal of Microelectromechanical Systems* Vol. 2(2):87-97, 1993
	ADDDD	Frazier et al., "Two Dimensional Metallic Microelectrode Arrays for Extracellular Stimulation and Recording of Neurons", *IEEE Proceedings of the Micro Electro Mechanical Systems Conference* , pp. 195-200 (1993).
	AEEEE	Hadgraft & Guy, eds., *Transdermal Drug Delivery: Developmental Issues and Research Initiatives* (1989)
	AFFFF	Haga et al., "Transdermal iontophoretic delivery of insulin using a photoetched microdevice," *Journal of Controlled Release* 43 (1997) 139-149
	AGGGG	Hashimi, et al., "Genetic Transformation of nematodes Using Arrays of Micromechanical Piercing Structures," *BioTechniques* 19(5):766-70 (1995)
	AHHHH	Henry et al., "Microfabricated Microneedles: A Novel Approach to Transdermal Drug Delivery" *Journal of Pharmaceutical Sciences* Vol. 87, No. 8 (1998)
	AIIII	Henry et al., "Micromachined Needles For the Transdermal Delivery of Drugs" IEEE Proceedings of *Micro Electro Mechanical Systems 11th Annual International Workshop* Heidelberg, Germany pp. 494-98 (January 25-29, 1998)
	AJJJJ	Hoffert "Transcutaneous Methods Get Under the Skin," *The Scientist* 12 (1998).
	AKKKK	Jaeger, *Volume V Introduction to Microelectronic Fabrication* (1988)
	ALLLL	Jansen et al., "The Black Silicon Method IV: The Fabrication of Three Dimensional Structures in Silicon With High Aspect Ratios For Scanning Probe Microscopy and Other Applications," *IEEE Proceedings of Micro Electro Mechanical Systems Conference*, pp. 88-93 (1995)
	AMMMM	Laermer et al., "Bosch deep Silicon Etching: Improving Uniformity and Etch Rate for Advanced MEMS Application" *IEEE International MEMS '99 Conference on Micro Electro Mechanical Systems* (January 17-21, 1999)
	ANNNN	Langer, "Drug Delivery and targeting" *Nature* Vol. 392 Supp. April 30, 1998 pp. 5-10
	AOOOO	Lehmann "Porous Silicon – A New Material For MEMS" *IEEE 9th Annual International Workshop on Micro Electro Mechanical Systems* (Feb. 11-15, 1996)
	APPPP	Lin, et al. "Silicon Processed Microneedles" *The 7th International Conference on Solid-State Sensors and Actuators*, 1993
	AQQQQ	Martin et al., "Template Synthesis of Organic Microtubules," *J. Am. Chem. Soc.* 1990, 112, 8976-8977

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	ARRRR	Najafi et al. "Strength Characterization of Silicon Microprobes in Neurophysiological Tissues," *IEEE Transactions on Biomedical Engineering* Vol. 37, No. 5 May 1990
	ASSSS	Prausnitz, Mark R. "Reversible Skin Permeabilization for Transdermal Delivery of Macromolecules" *Critical Reviews in Therapeutic Drug Carrier Systems*, 14(4):455-483 (1997)
	ATTTT	Quan, "Researchers envision pain-free drug delivery: Plasma etch yields microneedle arrays" *Electronic Engineering Times* 63:63-64 (1998)
	AUUUU	Rai-Choudhury, ed., *Handbook of Microlithography, Micromachining, and Microfabrication* Proceedings of the IEEE Micro Electro Mechanical Systems Conference 1987-1998
	AVVVV	Reiss "Glucose-and Blood Monitoring Systems Vie for Top Spot" *Biophotonics Int'l*, pp.43-45 (May/June 1997)
	AWWWW	Runyan, et al. *Semiconductor Integrated Circuit Processing Technology* (1990)
	AXXXX	Schift, "Fabrication of replicated high precision insert elements for micro-optical bench arrangements" *Proc. SPIE – International Soc. Optical Engineer* 3513:122-134 (1998)
	AYYYY	Talbot et al. "Polymolding: Two Wafer Polysilicon Micromolding of Closed Flow Passages for Microneedles and Microfluidic Devices" *Solid State Sensor and Actuator Workshop* Hilton Head Island, South Carolina, June 8-11 266-268 (1988).
	AZZZZ	Trimmer et al. "Injection of DNA into Plant and Animal Tissues with Micromechanical Piercing Structures" *IEEE Proceedings of Micro Electro Mechanical Systems Conference, pp. 111-15 (1995)*
	AAAAAA	Weber et al., "Micromolding – a powerful tool for the large scale production of precise microstructure," *Proc. SPIE – International Soc. Optical Engineer 2879:156-167 (1996).*
	ABBBBB	Zuska, "Microtechnology Opens Doors to the Universe of Small Space" *Medical Device and Diagnostic Industry*, p. 131 (1997).

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